

**WALTER ISAACSON:** I think deep inside the White House would probably rather— well, they love the fight. They want it to go on forever. Who can blame them? They'd like to see the Republican fight.

**CHARLIE ROSE:** [*Crosstalk*]

**WALTER ISAACSON:** They also think that the fissures within the Republican Party between balanced budget types, social conservative types, libertarians like Forbes and, and the optimists, the Kemp-Forbes wing of the party, that is great for them. I think in the end they're sort of partial to Bob Dole, for reasons that I couldn't quite put my finger on. He seems like a pretty formidable candidate, but I think at least they know how they'd run against Bob Dole. They're a little bit frightened—

**CHARLIE ROSE:** Are they—

**WALTER ISAACSON:** —of the Forbes thing.

**CHARLIE ROSE:** —cocky? I mean, is there a sense among the Clinton people, "Look, we've come a long way back. We've got this thing."

**WALTER ISAACSON:** Oh, no, I don't think—I mean, it's crazy to be cocky in politics these days. I think that they're feeling that they've got the message on track, they understand how they're going to run the campaign. But if you talk to the White House staffers, they are not cocky about it. They are watching it with a little bit of glee from the sidelines because they know it's going to be a long struggle.

**CHARLIE ROSE:** I guess if you've—

**WALTER ISAACSON:** We did—

**CHARLIE ROSE:** —seen the valleys, and then you get to sort of— on your way up to the top of the—

**WALTER ISAACSON:** I don't know how you could—

**CHARLIE ROSE:** —mountain—

**WALTER ISAACSON:** —work for Bill Clinton and be cocky.

**CHARLIE ROSE:** Yeah.

**WALTER ISAACSON:** He's on a roller coaster quite a bit of his political career, so I think there's ups and downs between now and November. We did a *Time*-CNN election monitor this past week, which is our way of getting behind the polls. And you go to 1,000 people who are Republicans, and not only poll them but interview them in depth. And it reinforces what Rick saw out there on the road, which is the flat tax is the entrée, it's the way people get into that message, but in the end why they were moving to Forbes, and they were the people for Perot, the people for Colin Powell, and a lot of them who were for Bob Dole have moved to Forbes because he's the outsider, and the more he gets attacked by Washington types, the better off he is. So I think it's not a flat tax message anymore. It's sort of that outsider message.

**CHARLIE ROSE:** So the conclusion to your question, "Is Forbes for real?" the answer is "Yes"?

**WALTER ISAACSON:** There's a very real movement in this corn— country. People fed up with the Washington way of doing taxes and doing business, and Forbes has put his finger on that. I don't think that he's the perfect messenger for it, though.

**CHARLIE ROSE:** All right.

When we return, Nobel laureate Dr. Joshua Lederberg and Dr. Margaret Hamburg, the NYC Commissioner of Health, talking about the rise in infectious diseases.

#### Infectious Diseases

**CHARLIE ROSE:** Doctors from all over the world have gotten together to call attention to a medical matter not getting the attention it deserves. Infectious diseases, once thought to be a

thing of the past, are making a big comeback. Due to factors like genetic evolution, misuse of antibiotics and increased mobility of the population death from infectious diseases took a 58 percent jump between 1980 and 1992. Joining me now to look at the cause of this increase and what it means for all of us is Nobel laureate, Dr. Joshua Lederberg. He is Professor Emeritus at Rockefeller University and a contributor to this month's *Journal of the American Medical Association*. Also, Margaret Hamburg, the Health Commissioner of New York. Dr. Hamburg is a graduate of Harvard Medical School.

Thank you both for coming. Dr. Lederberg, in, in your most alarmist, give me the extreme as to what the fear is, because you have point to, you know, a flu epidemic, I think, 1918, as a possible model as to what could happen if certain factors came together.

**Dr. JOSHUA LEDERBERG, Rockefeller University:** Well, that's the most tangible example of the sort of pandemic that I think we can very reasonably expect to happen again. What the mortality outcome will be will depend very much on the kind of preparations that we make for it. At that time, when we had a population less than half of what we have today, half a million Americans died, over 20 million people died around the world. There were as many casualties from the flu as there were from combat during all of World War I.

**CHARLIE ROSE:** When we look at things like the movie *Outbreak*, all of the attention to this in the popular press as well as, as the *Journal of the American Medical Association*, just January 17th, 1996 issue, why now? What's brought us to this point where there is now an alarming concern about the risk of infectious diseases?

**Dr. JOSHUA LEDERBERG:** Well, there are elements of reality, and there are elements of perception. They happen to converge at this point. I guess the greatest reality that we have had to confront has been the H.I.V. pandemic, which has spread throughout the world in the last 15 years, which will end up having millions of casualties, which has blighted the lives of many people, which hangs over as a very serious threat on many others. So that has discounted the idea that we had done with infectious disease once and for all. I think that, more than any other single factor, is what's behind our recognition of the change of resurgence.

**CHARLIE ROSE:** But even if you lim— eliminate the AIDS and the fatalities from AIDS and the death from AIDS and the tragedy of AIDS from that number that I re— read you, 58 percent, you still go down to a 22 percent increase in deaths and mortality from infectious diseases between 1980 and 1992.

**Dr. JOSHUA LEDERBERG:** Yes. Keeping in mind that it's from a relatively low base compared to the great killers like cancer and heart disease, there is the—

**CHARLIE ROSE:** That's third now.

**Dr. JOSHUA LEDERBERG:** —there is a reality that it has come up as a third grouping of cause of death. So there is that, again, objective reality that infectious diseases are overtaking us. We're seeing circumstances like the recurrence of tuberculosis in New York City, which Dr. Hamburg could tell you a great deal about.

**CHARLIE ROSE:** And has, in fact, on other programs. But let me, let me speak— what else are we talking about when we talk about infectious diseases other than AIDS and other than TB?

**MARGARET HAMBURG, M.D., NYC Health Commissioner:** Well, there's a whole host of diseases, new diseases that we're just learning how to cope with in recent years, AIDS being foremost among them, but Lyme disease, Legionnaire's disease, hanta virus [?], pulmonary syndrome, erlichiosis [?]. There's quite a roster. There are also the old diseases that we thought we conquered with the advent of antibiotics and vaccines, like tuberculosis, like measles. Rabies is another example of a disease that we thought was only of historical interest, but it's back, and it's back in places even like New York City. And then we have problems that are coming about partly as a result of the incredible tools we have in modern medicine. Antibiotic resistance is a very real problem. It's not a brand new problem, but it's a growing problem, in

many ways worse than ever because of our sophisticated medicine. We have severe problems treating some forms of tuberculosis that are more and more resistant to the drugs you have at hand.

**CHARLIE ROSE:** Why are they resistant? Why is tuberculosis now resistant to the drugs we have?

**MARGARET HAMBURG, M.D.:** Well, it's a combination of factors. It's both the biology of the organism, and it's also the treatment approaches. It's the problem that— with tuberculosis an extreme example, but any of the infectious diseases. You have a course of treatment that you need to take, and if you don't complete it, but you only partially take the medicine as prescribed, then you kill off the susceptible organisms and you start to actually breed the more resistant organisms. So with tuberculosis in particular, the problem of people starting therapy and never completing it has led to an enormous problem with drug resistant tuberculosis. But I want to stress, it's not just tuberculosis. It's many, many, many other organisms, and it's going to transform the way we deal with some problems. Simple ear infections in children, for example, used to always be treatable with penicillin. Now we're seeing more and more cases where the infection is resistant to our standards of treatment and may even require hospitalization and intravenous antibiotics in order to cure that case. So huge impact on individuals and families and hospital costs.

**CHARLIE ROSE:** All viruses, yes, the ones that she just listed, or not?

**Dr. JOSHUA LEDERBERG:** These are mostly bacteria that she's talking about, like tuberculosis and the ear infections.

**CHARLIE ROSE:** Yeah. What does that come from? What's the commonality to all of them?

**Dr. JOSHUA LEDERBERG:** I guess the commonality is that we're still in a Darwinian competition with all of the micro-predators that there are in the world. We stand at the top of the food chain. There is no other creature that we have to be concerned about. We're the predators, but with one exception, and these are the bugs that use us for meat. They're the bacteria, the viruses, the fungi that are the sources of these infections. That's the commonality.

**CHARLIE ROSE:** And what's the— what is it that the medical community can do, other than, the point that you have raised in your own writing, which is to take a global look at it and recognize that it has global dimensions?

**Dr. JOSHUA LEDERBERG:** The global perspective is the most important, and that isn't just the medical community; that's really every one of us. That requires political and social action, not just medical responses. But then, more particularly, we need better surveillance; we need intelligence about where the enemy is, where it's coming up; we need more intense programs of development for new drugs and vaccines. Those really are the principle elements.

**CHARLIE ROSE:** Are you pessimistic?

**Dr. JOSHUA LEDERBERG:** Well, I ought to be—

**CHARLIE ROSE:** I mean, as we've said earlier—

**Dr. JOSHUA LEDERBERG:** Yeah.

**CHARLIE ROSE:** —you won the Nobel prize when you were a 33-year-old researcher in 1958.

**Dr. JOSHUA LEDERBERG:** So?

**CHARLIE ROSE:** So you've— so you've seen a lot of— you've seen a lot. You're wiser than, than Margaret is, and you're wiser than I am.

**Dr. JOSHUA LEDERBERG:** No, I'm not wiser.

**CHARLIE ROSE:** Because you've experienced more, you know. You have more perspective, more history, more — what, Margaret? Help me out.

**MARGARET HAMBURG, M.D.:** Well—

**Dr. JOSHUA LEDERBERG:** I—

**MARGARET HAMBURG, M.D.:** —he's certainly been a mentor to many of us.

**Dr. JOSHUA LEDERBERG:** I, I have every reason—

**CHARLIE ROSE:** You've been in the battle longer than we have.

**Dr. JOSHUA LEDERBERG:** I, I have every reason to be pessimistic, but I have re- the considerations that we've just mentioned, but I also know what powerful science we have. I know what kinds of depths of insight—

**CHARLIE ROSE:** All right. Well, let me stop you here. You have every reason to be pessimistic because these micro— micro-what?

**Dr. JOSHUA LEDERBERG:** Well, these microbial predators is close.

**CHARLIE ROSE:** Microbial predators is—

**Dr. JOSHUA LEDERBERG:** Yes.

**CHARLIE ROSE:** —the word I was looking for. It was right on the tip of my tongue, Dr. Lederberg.

**Dr. JOSHUA LEDERBERG:** Yeah.

**CHARLIE ROSE:** These microbial predators. Because they're so wily, they're so competitive, they're so strong, they're so—

**Dr. JOSHUA LEDERBERG:** There are so many of them.

**CHARLIE ROSE:** There are so many of them.

**Dr. JOSHUA LEDERBERG:** Yes, there are. There can be billions. In this—

**CHARLIE ROSE:** Yeah.

**Dr. JOSHUA LEDERBERG:** —glass, there could be 10 times the number of microorganisms than the number of humans that ever lived on the surface of the earth. They turn over very quickly. Their populations rise and fall. It's of no consequence if, if a billion bacteria die, and if there's one survivor, it will grow up, and it'll dominate the population thereafter. That's the fate of microbes to have these huge population swings. We can't tolerate that kind of—

**CHARLIE ROSE:** Sure.

**Dr. JOSHUA LEDERBERG:** —fluctuation, so we have to use our wits against their evolutionary potential. That's really the basic name of the game. Well, I'm optimistic about our wits. There is so much science, so much technology. There is such deep insight that we have from our research and the application of that research that if we could just put our tools to good use, we could lick these problems. That's why I brought in the phrase of using our social intelligence—

**CHARLIE ROSE:** Right.

**Dr. JOSHUA LEDERBERG:** —in order to try to combat it. Now, should, should I be an optimist—

**CHARLIE ROSE:** What's social intelligence?

**Dr. JOSHUA LEDERBERG:** That's the intelligence of individuals effected and implemented through social action. Now, we don't always show a lot of it. We could lick AIDS tomorrow by behavioral change. We know exactly how it's transmitted. If people would behave appropriately to protect their own interests and that of the people that they love, the further transmission of AIDS could stop tomorrow.

**CHARLIE ROSE:** So drug addicts would use clean needles, and, and safe sex would be practiced by everybody and—

**Dr. JOSHUA LEDERBERG:** If people would protect themselves—

**CHARLIE ROSE:** Right.

**Dr. JOSHUA LEDERBERG:** —they would protect everyone else. Now, that takes more than individual intelligence to accomplish, and in the aggregate, it hasn't worked all that well. AIDS has gotten on top of us. We're just gradually catching up to it. So, should I be optimistic or pessimistic that we'll have better responses with regard to the other things that are coming along?

**CHARLIE ROSE:** To the use of our social intelligence.

**Dr. JOSHUA LEDERBERG:** That's right.

**CHARLIE ROSE:** Are you— so are you optimistic that we will use our social intelligence or not?

**Dr. JOSHUA LEDERBERG:** I take a reserved position on that.

**CHARLIE ROSE:** What's a reserved position?

**Dr. JOSHUA LEDERBERG:** That says we just do the best we can. It's not a foregone conclusion.

**CHARLIE ROSE:** Yeah.

**Dr. JOSHUA LEDERBERG:** We have ti—

**CHARLIE ROSE:** We have a chance.

**Dr. JOSHUA LEDERBERG:** We have a chance, and that's why, of course, Dr. Hamburg and I devote ourselves to trying to inspire that intelligence.

**CHARLIE ROSE:** Yeah. What should individual citizens do, then, Dr. Hamburg? Last question.

**MARGARET HAMBURG, M.D.:** Well, I think it's a combination of individual and social action, but as Dr. Lederberg was saying, we really are at a critical moment in time. We've got a fierce enemy. We've got to make sure that the kind of public health programs that protect each and every one of us are in place to keep a safe and healthy food supply, a safe and healthy water supply, to prevent outbreaks of communicable disease. And that involves both individuals taking responsibility for their own behaviors and to reduce their own risk and the risk of others. But it does involve a collective effort, a local and a global effort, to put in place the public health programs and make a difference.

**CHARLIE ROSE:** And smart scientists.

**MARGARET HAMBURG, M.D.:** And smart scientists help a lot.

**Dr. JOSHUA LEDERBERG:** It, it takes public support. The Centers for Disease Control is the principal federal agency involved in protecting us in these matters. So what's happened this year? Hooray. They got a \$10 million increase in their budget to deal with emerging infections. At the same time, they got a \$30 million cut across the board. Now, have we made progress or not?

**MARGARET HAMBURG, M.D.:** And as some have pointed out, Dustin Hoffman probably received a bigger salary for his role in *Outbreak* than the entire CDC budget for emerging type of diseases. So as a nation, I'm not sure that our priorities are really where they need to be if we're going to prevent continuing onslaughts of infectious diseases.

**CHARLIE ROSE:** Yeah. But could you not raise that question about, about research and, and the battle against all diseases, that the, the resources are- have not been there to do the job, whether it is— whether it's cancer or whether it's infectious diseases?

**Dr. JOSHUA LEDERBERG:** I'd be the first one to say there's always much more that we could do. I've been in the battlegrounds on that over many years. We have a wonderful, large, and effective research program. The United States spends proportionately more than any other country in this particular sphere. So that's the good news. The bad news, that it has plateaued during recent years. We have a lot of very bright youngsters who could be making much greater contributions. They're stymied, discouraged, many of them are leaving science because they just can't face the instability of the support. So, you know, we've done wonderfully. We could be doing very much more. Within that setting, I think infectious disease has been downplayed disproportionately and inappropriately because of our complacency about it. We thought we had it licked, and in fact, we didn't. So it needs a particular boost even in comparison to the others.

**MARGARET HAMBURG, M.D.:** And we don't really use our health care dollars that wisely, at least in my view. With, you know, nearly a trillion dollar health care expenditure every year,

less than one percent of those dollars are going to the sort of core public health functions that, that address head-on these kind of issues that protect you from environmental health threats, that control communicable disease, that track disease trends so we know what are emerging problems that give us the tools to address them.

**Dr. JOSHUA LEDERBERG:** People will spend anything to take care of their health once they're ill. What we have to do is to ask to use some foresight, look ahead, try to make the much smaller investments before the damage has been done, which will pay off much more in the long run.

**CHARLIE ROSE:** It's the old notion of prevention.

**Dr. JOSHUA LEDERBERG:** Yes. Exactly.

**CHARLIE ROSE:** Thank you, Dr. Lederberg. Thank you, Dr. Hamburg.

Thank you for joining us. We'll see you tomorrow night.

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